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COPPER • BRASS • BRONZE

copper supply & consumption

1970-1990

COPPER DEVELOPMENT ASSOCIATION INC.

Preface

Statistical data on the supply and consumption of copper and copper alloys in the United States are available from many governmental and private sources. In this report original data from these sources are brought together and rationalized by CDA and American Bureau of Metal Statistics Inc. (ABMS) to provide a set of data on U.S. copper supply and consumption that is both consistent and accurate in all aspects from mine to end-use market.

The main sources of information assembled here are the Bureau of Mines in the U.S. Department of the Interior, the Bureau of the Census in the U.S. Department of Commerce, and Copper Development Association Inc. Where data from different sources are conflicting, and where original data appear to be in error, the best judgment has been applied. General sources are shown in the tables throughout the report. Those interested to know the specific sources of any of the data should contact CDA.

The statistics are arranged in a logical sequence to trace the flow of copper in the U.S. economy from mining and scrap collection through smelting, refining and ingot making to the wire rod and wire mills, brass mills, and foundries and then on to the final end-use markets. This flow is shown schematically on pages 4-5. On this schematic flowsheet the major statistics of copper supply and consumption in the United States for 1990 appear. Along with each major statistic on the chart, a reference is shown. This reference identifies the table in the report where details on that item, from 1970 through 1990, will be found. Most data for 1990 are preliminary.

There are four major tables in the report. *Table 1* covers the supply of primary copper. *Table 2* presents data on the supply of copper from secondary sources. In *Table 3,* statistics on the consumption of primary and secondary metals by mills, foundries and other industries are summarized. These three tables are provided by ABMS. Finally, *Table 4* details the supply of mill, foundry and powder products and their consumption in the five end-use market areas. In each of these tables, additions to the flow (such as net imports) are indicated as positive numbers, while subtractions from the flow (such as melting losses or net additions to stocks) are shown as negative numbers.

The arrangement of the data in the report can be illustrated with an example. Consider *Mine Production,* the upper left-hand box in the flowsheet on page 4. As shown in the box, mine production of copper in the United States totaled 1,739.0 thousand short tons in 1990. Beneath this figure a number appears referring to *Table 1, Item 1,* abbreviated *1 (1)*. This means that in *Table 1,* on Line (1), mine production is shown for the full period 1970 through 1990. In *Table 1,* on Line (1), a further reference will be found after the item heading *Mine Production*, directing the reader to page 7. This reference means that further details on mine production appear on page 7. In fact, on page 7, a table entitled *Table 1, Item 1* presents the data on mine production by state for 1970 through 1990. In this way all the data on supply and consumption appear in logical sequence proceeding through the report, eliminating the need for explanatory text.

In this issue, U.S. production of electrodeposited foil for printed circuits is included for the first time. This inclusion results in revisions on pages 18 and 19 for Strip, Sheet, Plate (& Foil). Actual data were provided for 1983–1989; data for the remaining years (1970–1982 and 1990) are estimated, based on trends in the use of copper in electronics.

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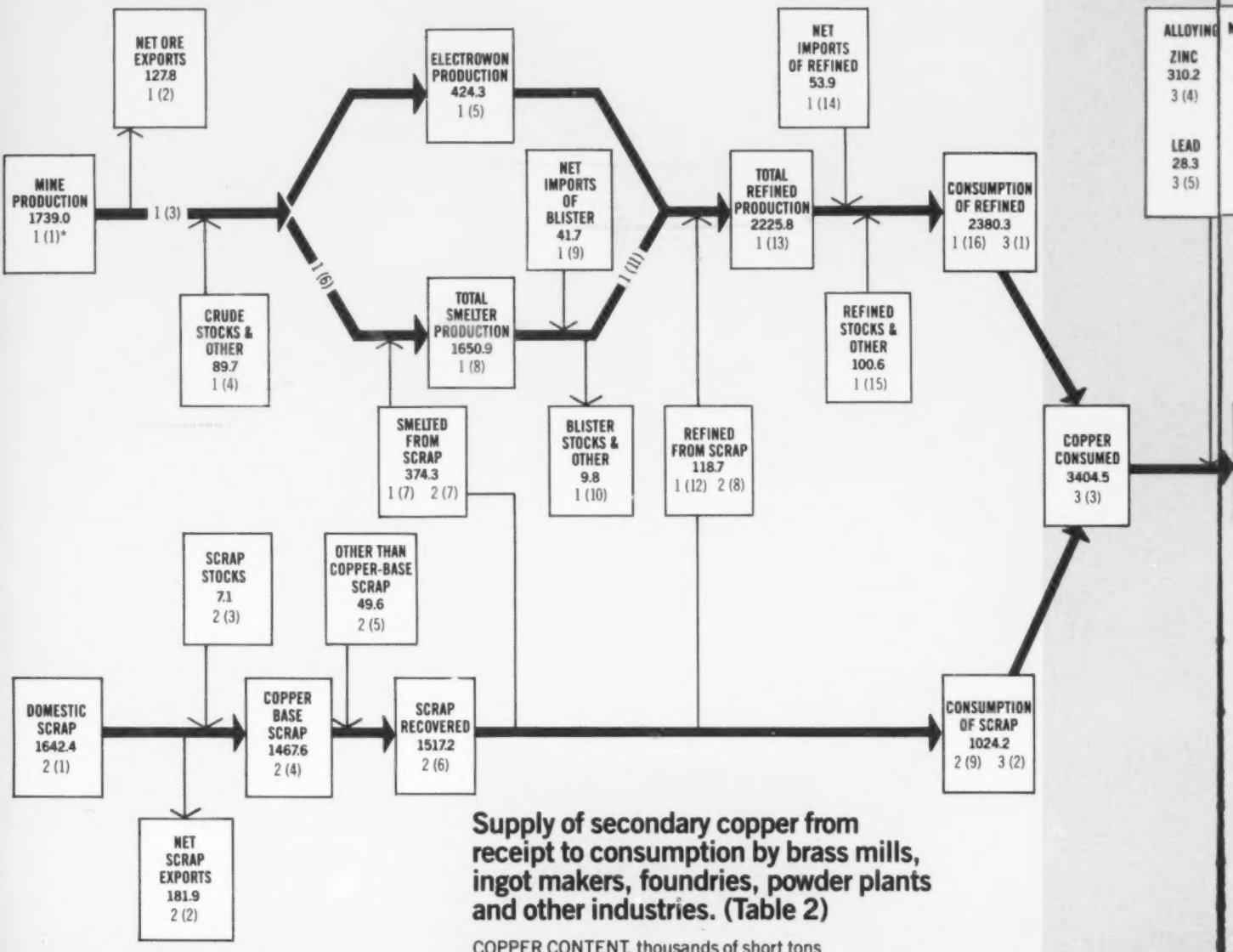
Copper supply and consumption in the United States 1990

Supply of primary copper from mine to consumption by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries. (Table 1)

COPPER CONTENT, thousands of short tons


NET ORE EXPORTS 127.8 1 (2)
MINE PRODUCTION 1739.0 1 (1)*
1 (3)
CRUDE STOCKS & OTHER 89.7 1 (4)
ELECTROWON PRODUCTION 424.3 1 (5)
1 (6)
TOTAL SMELTER PRODUCTION 1650.9 1 (8)
NET IMPORTS OF BLISTER 41.7 1 (9)
1 (11)
NET IMPORTS OF REFINED 53.9 1 (14)
TOTAL REFINED PRODUCTION 2225.8 1 (13)
REFINED STOCKS & OTHER 100.6 1 (15)
CONSUMPTION OF REFINED 2380.3 1 (16) 3 (1)
ALLOYING ZINC 310.2 3 (4) LEAD 28.3 3 (5)
SMELTED FROM SCRAP 374.3 1 (7) 2 (7)
BLISTER STOCKS & OTHER 9.8 1 (10)
REFINED FROM SCRAP 118.7 1 (12) 2 (8)
COPPER CONSUMED 3404.5 3 (3)
SCRAP STOCKS 7.1 2 (3)
OTHER THAN COPPER-BASE SCRAP 49.6 2 (5)
DOMESTIC SCRAP 1642.4 2 (1)
COPPER BASE SCRAP 1467.6 2 (4)
SCRAP RECOVERED 1517.2 2 (6)
CONSUMPTION OF SCRAP 1024.2 2 (9) 3 (2)
NET SCRAP EXPORTS 181.9 2 (2)

Supply of secondary copper from receipt to consumption by brass mills, ingot makers, foundries, powder plants and other industries. (Table 2)

COPPER CONTENT, thousands of short tons

*1 (1) Refers to table and item in report where data for 1970 through 1990 appear.

Consumption of metals by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries. (Table 3)

METAL CONTENT, thousands of short tons

METAL CONSUMED 3766.3 3 (9)
NET METAL CONSUMED 3677.9 3 (12)
INGOT MAKERS 193.9 3 (10)
INGOT STOCKS & OTHER 88.4 3 (11)
OTHER INDUSTRIES 119.1 3 (25)
WIRE ROD MILLS 1822.7 3 (13)
BRASS MILLS 1468.7 3 (16)
FOUNDRIES 241.5 3 (19)
POWDER PLANTS 25.9 3 (22)
METAL STOCKS & OTHER 164.2 3 (14)
METAL STOCKS & OTHER 148.7 3 (17)
METAL STOCKS & OTHER 6.0 3 (20)
METAL STOCKS & OTHER 6.9 3 (23)
3 (15)
3 (18)
3 (21)
3 (24)

Supply of wire mill, brass mill, foundry and powder products and their consumption in the end-use markets. (Table 4)

METAL CONTENT, millions of pounds

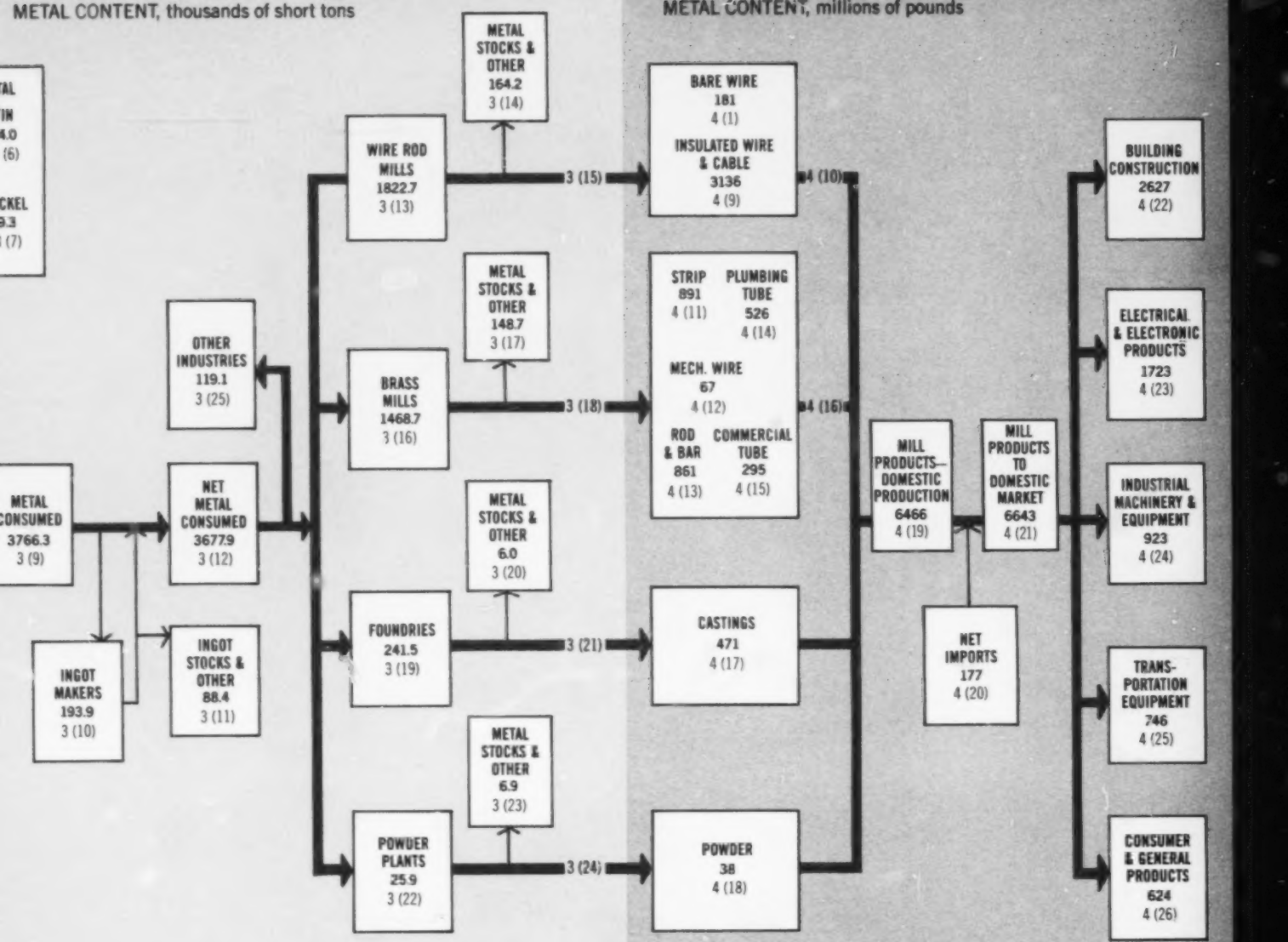

BARE WIRE 181 4 (1)
INSULATED WIRE & CABLE 3136 4 (9)
STRIP 891 4 (11)
PLUMBING TUBE 526 4 (14)
MECH. WIRE 67 4 (12)
ROD & BAR 861 4 (13)
COMMERCIAL TUBE 295 4 (15)
CASTINGS 471 4 (17)
POWDER 38 4 (18)
4 (10)
4 (16)
MILL PRODUCTS—DOMESTIC PRODUCTION 6466 4 (19)
NET IMPORTS 177 4 (20)
MILL PRODUCTS TO DOMESTIC MARKET 6643 4 (21)
BUILDING CONSTRUCTION 2627 4 (22)
ELECTRICAL & ELECTRONIC PRODUCTS 1723 4 (23)
INDUSTRIAL MACHINERY & EQUIPMENT 923 4 (24)
TRANS-PORTATION EQUIPMENT 746 4 (25)
CONSUMER & GENERAL PRODUCTS 624 4 (26)

Table 1

Supply of primary copper from mine to consumption by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries

COPPER CONTENT, thousands of short tons

		1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
(1)	Mine Production (page 7)	1,719.7	1,522.2	1,664.8	1,717.9	1,597.0	1,413.4	1,605.6	1,504.0	1,496.5	1,594.6	1,301.9	1,695.5	1,264.3	1,144.3	1,215.4	1,217.9	1,261.3	1,370.9	1,561.9r	1,650.7r	1,739.0
(2)	Net Ore Imports (page 8) (a)	–27.7	23.1	35.4	19.4	36.7	65.7	74.8	42.2	13.9	–23.9	–101.2	–130.2	–107.1	55.7	–50.2	–120.5	–186.2	–124.7	–230.3	–252.0r	–127.8
(3)	Total Crude Primary	1,692.0	1,545.3	1,700.2	1,737.3	1,633.7	1,479.1	1,680.4	1,546.2	1,510.4	1,570.7	1,200.7	1,565.3	1,157.2	1,200.0	1,165.2	1,097.4	1,075.1	1,246.2	1,331.6r	1,398.7r	1,611.2
(4)	Crude Stocks and Other	–14.5	–9.3	21.6	47.6	–29.4	8.1	–42.0	26.9	14.5	8.8	38.7	61.5	62.1	–64.9	63.1	39.3	64.1	3.2r	69.3r	180.2r	89.7
(5)	Electrowon Production	36.2	36.0	31.4	40.9	34.4	40.1	103.7	137.9	104.7	107.2	127.9	175.3	143.8	112.4	110.4	99.7	138.2	177.8r	251.3	343.8r	424.3
(6)	Smelter Production From Primary	1,641.3	1,500.0	1,690.4	1,744.0	1,569.9	1,447.1	1,534.7	1,435.2	1,420.2	1,472.3	1,111.5	1,451.5	1,075.5	1,022.7	1,117.9	1,037.0	1,001.0	1,071.6	1,149.6	1,235.1	1,276.6
(7)	Smelter Production From Scrap	78.9	66.3	69.0	77.8	79.5	49.4	51.0	49.4	59.8	66.4	49.5	67.1	49.7	65.3	186.6	275.7	317.3	304.9	353.0	395.8	374.3
(8)	Total Smelter Production (page 8)	1,720.2	1,566.3	1,759.4	1,821.8	1,649.4	1,496.5	1,585.7	1,484.6	1,480.0	1,538.7	1,161.0	1,518.6	1,125.2	1,088.0	1,304.5	1,312.7	1,318.3	1,376.5	1,502.6	1,630.9	1,650.9
(9)	Net Imports of Blister (page 8)	216.6	128.0	148.9	146.6	205.1	87.4	41.1	28.3	70.0	66.9	47.6	71.1	111.8	79.4	57.1	11.6	33.4	34.4	72.5	79.0r	41.7
(10)	Blister Stocks and Other (page 9)	–129.0	–72.2	2.5	–63.0	–154.7	–131.2	–140.2	–105.2	2.4	24.0	47.7	4.1	21.2	88.5	8.8	17.1	11.3	–41.6r	76.5r	–30.0r	–9.8
(11)	Refined Production from Blister	1,807.8	1,622.1	1,910.8	1,905.4	1,699.8	1,452.7	1,486.6	1,407.7	1,552.4	1,629.6	1,256.3	1,593.8	1,258.2	1,255.9	1,370.4	1,341.4	1,363.0	1,369.3r	1,651.6r	1,679.9	1,682.8
(12)	Refined Production from Scrap	398.7	304.3	316.3	366.3	404.4	282.1	300.2	303.0	362.3	441.2	474.3	465.1	465.7	377.5	151.3	134.1	130.1	152.3	139.1r	129.9	118.7
(13)	Total Refined Production (page 9)	2,242.7	1,962.4	2,258.5	2,312.6	2,138.6	1,774.9	1,890.5	1,848.6	2,019.4	2,178.0	1,858.5	2,234.2	1,867.7	1,745.8	1,632.1	1,575.2	1,631.3	1,699.4	2,042.0r	2,153.6r	2,225.8
(14)	Net Imports of Refined (page 9) (a)	89.9	–23.7	9.7	8.8	177.2	–26.4	266.1	327.8	342.7	147.1	481.1	325.2	274.2	435.2	450.4	350.3	524.9	536.7	300.3	174.5r	53.9
(15)	Refined Stocks and Other (page 10)	–102.3	82.3	–30.6	126.9	–112.3	–206.2	–159.1	16.8	59.6	60.9	–280.8	–322.3	–307.5	–184.2	257.4	232.8	158.6	108.2	89.3r	100.8r	100.6
(16)	Consumption of Refined (page 10)	2,050.5	2,021.0	2,237.6	2,448.3	2,203.5	1,542.3	1,997.5	2,193.2	2,421.7	2,386.0	2,058.8	2,237.1	1,834.4	1,996.8	2,339.9	2,158.3	2,314.8	2,344.3	2,431.6	2,428.9r	2,380.3

Sources: U.S. Department of the Interior, Bureau of Mines;
U.S. Department of Commerce, Bureau of the Census; ABMS.

p - preliminary r - revised

(a) - Negative (–) signs denote net exports.

Table 1, Item 1.

Mine production of recoverable copper in the United States

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Arizona	917.9	820.2	908.6	927.3	858.8	813.2	1,024.4	923.8	982.6	1,046.1	848.9	1,147.3	848.3	747.6	822.8	877.0	866.5	827.9	928.9r	990.2r	1,072.5
Michigan	67.5	56.0	67.3	72.2	67.0	73.7	43.7	42.4	38.4	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Missouri	12.1	8.4	11.5	10.3	12.7	14.3	11.1	11.7	11.9	14.4	15.0	9.3	8.8	8.5	6.4	14.8	(b)	(b)	(b)	(b)	(b)
Montana	120.4	88.6	123.1	132.5	131.1	88.0	91.1	86.2	74.2	77.0	41.6	68.9	71.6	36.8	24.1	16.6	(b)	(b)	(b)	(b)	(b)
Nevada	106.7	96.9	101.1	93.7	84.1	81.2	58.2	67.1	22.5	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
New Mexico	166.3	157.4	168.0	204.7	196.6	146.3	172.4	164.7	140.9	181.1	164.7	169.9	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Tennessee	15.5	13.9	11.3	8.5	6.3	10.0	11.1	6.2	12.4	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Utah	295.7	263.5	259.5	256.6	230.6	177.2	185.5	194.1	205.4	212.8	173.9	232.9	208.4	187.1	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Other States [a]	17.6	17.3	14.4	12.1	9.8	9.5	8.1	7.8	8.2	63.2	57.8	67.2	127.2	164.3	362.1	309.5	394.8	543.0	633.0r	660.5r	666.5
TOTAL	**1,719.7**	**1,522.2**	**1,664.8**	**1,717.9**	**1,597.0**	**1,413.4**	**1,605.6**	**1,504.0**	**1,496.5**	**1,594.6**	**1,301.9**	**1,695.5**	**1,264.3**	**1,144.3**	**1,215.4**	**1,217.9**	**1,261.3**	**1,370.9**	**1,561.9r**	**1,650.7r**	**1,739.0**

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS. p - preliminary r - revised
(a) - Includes California, Colorado, Idaho, Maine, Oregon, Pennsylvania & Washington.
(b) - Included in Other States.

Mine production of recoverable copper in the World

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Australia	173.9	195.4	204.8	242.8	277.0	241.4	240.9	244.3	244.8	261.9	268.4	255.0	270.4	288.3	259.8	286.4	273.8	256.5	269.0r	325.2r	348.3
Brazil	4.2	5.8	5.0	3.7	3.4	2.1	0.1	—	0.1	—	0.4	15.3	26.9	35.4	38.8	45.2	44.3	44.4r	49.1r	50.5r	42.7
Bulgaria	44.4	47.4	52.9	52.9	56.9	60.6	62.8	62.8	63.9	66.1	68.3	68.3	71.7	75.0	80.5	86.0	66.1r	66.1r	55.1r	55.1r	55.1
Canada	672.7	721.5	793.3	908.2	905.4	808.9	805.7	837.1	726.9	701.5	789.7	762.0	675.2	719.8	795.6	814.2	770.0	884.3r	855.9r	797.0r	884.1
Chile	762.4	780.8	790.1	810.6	994.4	913.0	1,108.0	1,162.1	1,140.0	1,171.4	1,177.2	1,191.7	1,369.3	1,386.2	1,422.8	1,495.2	1,543.0	1,563.2	1,599.5	1,773.9	1,750.5
China (including Mongolia)	110.2	121.3	126.8	132.3	143.3	154.3	165.3	170.9	180.8	200.3	230.4	266.5	297.6	297.6	308.6	330.7	374.8	518.1	551.2	567.7r	567.7
India	10.7	12.3	16.1	24.7	22.9	26.7	28.0	33.3	29.3	30.5	30.4	27.8	26.5	48.3	51.8	52.9	54.2	59.6	56.8	58.8r	56.9
Indonesia	—	—	5.5	41.8	72.1	70.0	76.2	62.9	63.9	66.4	65.0	69.0	82.8	86.6	94.4	97.8	105.6	116.1	139.1r	163.8r	182.3
Iran	1.1	1.1	1.3	2.2	2.2	4.4	6.6	6.6	6.6	3.3	1.1	2.2	47.4	63.5	47.7	44.1	55.1	44.1	56.2	75.0r	71.1
Japan	131.7	133.4	123.6	100.6	90.5	93.7	89.9	89.7	79.4	65.1	58.0	56.8	55.9	50.7	47.7	47.6	38.5	26.2	18.4	16.2r	14.4
Mexico	67.2	69.7	86.8	88.7	91.2	86.2	98.1	98.9	96.1	118.1	193.3	254.1	263.6	227.2	208.4	197.2	200.6	272.9	308.0r	274.8r	323.2
Namibia (South West Africa)	25.1	28.5	23.7	31.7	36.6	38.5	48.0	55.2	41.6	46.2	43.2	48.8	53.8	57.4	55.1	52.5	55.0	42.7	43.9r	36.2r	34.6
Papua New Guinea	—	—	136.7	201.6	202.9	190.1	194.6	201.0	218.9	188.3	161.8	182.3	187.4	201.9	181.2	192.9	196.9	240.0	235.6	226.1r	187.4
Peru	242.7	228.5	241.5	223.4	233.2	194.0	207.2	370.4	419.9	446.9	404.2	361.1	392.8	355.2	401.4	441.8	438.1	448.0	328.8	401.4r	346.2
Philippines	176.7	217.8	235.6	243.8	248.6	248.9	261.9	300.7	290.6	328.8	335.7	333.2	322.0	299.2	257.3	244.9	245.4	238.2	240.4r	211.6r	198.9
Poland	91.4	134.7	148.8	167.6	203.9	253.5	289.9	310.9	343.9	374.8	378.1	324.7	414.5	443.5	475.1	476.2	479.5	482.8	486.1	424.4r	424.4
Portugal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3	0.2	1.2	5.5	114.0r	173.1
Scandinavia	84.9	88.6	100.1	124.5	110.7	118.6	129.8	133.0	135.9	127.4	119.7	129.0	133.6	149.6	155.9	158.0	157.4	139.8	121.9	110.8r	118.0
South Africa	164.5	173.6	178.5	193.8	197.4	197.2	217.0	238.2	230.7	224.0	233.6	232.1	228.3	233.5	233.7	224.0	212.6	217.3	211.8r	216.7r	196.0
United States	1,719.7	1,522.2	1,664.8	1,717.9	1,597.0	1,413.4	1,605.6	1,504.0	1,496.5	1,594.6	1,301.9	1,695.5	1,264.3	1,144.3	1,215.4	1,217.9	1,261.3	1,370.9	1,561.9r	1,650.7r	1,739.0
USSR	887.0	949.0	988.0	1,017.0	1,017.0	1,047.2	1,080.3	1,080.3	1,069.2	1,069.2	1,080.3	1,102.3	1,113.3	1,124.4	1,124.4	1,135.4	1,135.4	1,113.3	1,091.3	1,047.2r	1,047.2
Yugoslavia	100.1	104.1	113.6	123.2	123.6	126.7	132.4	128.1	135.9	122.8	128.7	122.4	131.5	142.7	128.1	133.5	129.7	122.2	114.1	131.2r	122.1
Zaire	426.7	448.8	480.3	538.5	550.8	545.4	490.1	530.9	467.2	440.7	506.7	556.4	554.2	553.6	551.9	553.5	554.0	551.8	512.7r	485.7r	392.6
Zambia	754.1	718.0	790.5	778.9	769.4	746.2	781.4	723.1	708.8	648.5	656.8	647.5	624.9	598.3	622.6	572.8	599.1	580.9	524.7r	551.2r	568.5
Other (20 countries in 1990)	273.7	294.6	329.8	360.5	352.8	342.3	322.6	314.7	269.5	263.1	257.0	288.5	299.9	307.8	329.3	348.7	301.4r	279.9r	272.3r	286.3r	267.4
TOTAL WORLD	**6,925.1**	**6,997.1**	**7,538.1**	**8,130.9**	**8,303.2**	**7,923.3**	**8,442.4**	**8,659.1**	**8,460.4**	**8,559.9**	**8,489.9**	**8,992.5**	**8,907.8**	**8,890.0**	**9,087.5**	**9,249.7**	**9,292.0r**	**9,680.5r**	**9,709.3r**	**10,051.5r**	**10,111.7**

Sources: United States - U.S. Department of the Interior, Bureau of Mines.
Other Countries - ABMS; Metallgesellschaft; CDA.
p - preliminary r - revised

Table 1, Item 2.

Imports and exports of copper ore in the United States

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Imports (Ore, Concentrate, Matte)	33.8	31.3	55.0	42.9	56.0	74.0	89.6	58.0	33.2	25.2	16.5	36.0	108.1	102.8	17.1	7.7	6.0	12.8	9.1	52.3	159.8
Exports (Ore, Concentrate, Matte)	–61.5	–8.2	–19.6	–23.5	–19.3	–8.3	–14.8	–15.8	–19.3	–49.1	–117.7	–166.2	–215.2	–47.1	–67.3	–128.2	–192.2	–137.5	–239.4	–304.3r	–287.6
Net Imports (Ore, Concentrate, Matte)	–27.7	23.1	35.4	19.4	36.7	65.7	74.8	42.2	13.9	–23.9	–101.2	–130.2	–107.1	55.7	–50.2	–120.5	–186.2	–124.7	–230.3	–252.0r	–127.9

Source: U.S. Department of Commerce, Bureau of the Census.
p - preliminary r - revised

Table 1, Item 8.

Smelter production of copper in the United States

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Smelter Production - Domestic Ore (Table 1, Item 6)	1,605.2	1,470.8	1,649.1	1,705.1	1,532.1	1,374.3	1,461.3	1,394.4	1,399.9	1,447.6	1,096.2	1,427.5	1,036.8	979.0	1,091.2	1,035.4	1,001.0	1,071.6	1,149.6	1,235.1	1,276.6
Smelter Production - Foreign Ore (Table 1, Item 6)	36.1	29.2	41.3	38.9	37.8	72.8	73.4	40.8	20.3	24.7	15.3	24.0	38.7	43.7	26.7	1.6	(a)	(a)	(a)	(a)	(a)
Smelter Production - Scrap (Table 1, Item 7)	78.9	66.3	69.0	77.8	79.5	49.4	51.0	49.4	59.8	66.4	49.5	67.1	49.7	65.3	186.6	275.7	317.3	304.9	353.0	395.8	374.3
TOTAL SMELTER PRODUCTION	1,720.2	1,566.3	1,759.4	1,821.8	1,649.4	1,496.5	1,585.7	1,484.6	1,480.0	1,538.7	1,161.0	1,518.6	1,125.2	1,088.0	1,304.5	1,312.7	1,318.3	1,376.5	1,502.6	1,630.9	1,650.9

Source: U.S. Department of the Interior, Bureau of Mines.
p - preliminary
(a) - Included under domestic ore.

Table 1, Item 9.

Imports and exports of blister copper in the United States

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Imports of Blister Copper	224.4	156.7	157.4	154.1	207.8	88.9	43.8	44.7	81.4	75.1	51.8	81.3	114.0	87.6	66.3	31.4	51.0	48.0	108.5	85.1	48.8
Exports of Blister Copper	–7.8	–28.7	–8.5	–7.5	–2.7	–1.5	–2.7	–16.4	–11.4	–8.2	–4.2	–10.2	–2.2	–8.2	–9.2	–19.8	–17.6	–13.6	–36.0	–6.1r	–7.1
Net Imports of Blister Copper	216.6	128.0	148.9	146.6	205.1	87.4	41.1	28.3	70.0	66.9	47.6	71.1	111.8	79.4	57.1	11.6	33.4	34.4	72.5	79.0r	41.7

Source: U.S. Department of Commerce, Bureau of the Census.
p - preliminary r - revised

Table 1, Item 10.

Blister stocks and other

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
End-of-Year Blister Copper Stocks	340.0	303.0	282.0	265.0	324.0	312.0	321.0	346.0	290.0	303.1	299.8	305.3	256.8	191.8	270.1	160.9	149.9r	165.3	133.4r	145.5	98.1
Net Change [a]	49.0	–37.0	–21.0	–17.0	59.0	–12.0	9.0	25.0	–56.0	13.1	–3.3	5.5	–48.5	–65.0	78.3	–109.2	–11.0r	15.4r	–31.9r	12.1r	–47.4
Apparent Change [b]	129.0	72.2	–2.5	63.0	154.7	131.2	141.2	105.2	–2.4	–24.0	–47.7	–4.1	–21.2	–88.5	–8.8	–17.1	–11.3	41.6r	–76.5r	30.0r	9.8

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Net Change — the year-to-year increase (+) or decrease (–) of blister copper stocks as reported.
(b) - Apparent Change — the difference between Line 11 and the sum of Lines 8 & 9 in Table 1, required to rationalize the CDA flow sheet. Factors other than changes in stocks are included in the apparent change. The sign of the data (+ or –) is opposite that shown in Table 1.

Table 1, Item 13.

Production of refined copper in the United States

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Refined Production - Primary Sources (Table 1, Items 1, 2, 4, 9 & 10)	1,765.1	1,591.8	1,873.2	1,868.5	1,654.7	1,443.4	1,539.3	1,496.2	1,597.3	1,670.4	1,334.7	1,702.0	1,352.3	1,303.0	1,294.2	1,165.4	1,183.9	1,242.2	1,549.9r	1,627.9r	1,732.8
Refined Production - Scrap at Smelters (Table 1, Item 7)	78.9	66.3	69.0	77.8	79.5	49.4	51.0	49.4	59.8	66.4	49.5	67.1	49.7	65.3	186.6	275.7	317.3	304.9	353.0	395.8	374.3
Refined Production - Scrap at Refiners (Table 1, Item 12)	398.7	304.3	316.3	366.3	404.4	282.1	300.2	303.0	362.3	441.2	474.3	465.1	465.7	377.5	151.3	134.1	130.1	152.3	139.1r	129.9	118.7
TOTAL REFINED PRODUCTION	**2,242.7**	**1,962.4**	**2,258.5**	**2,312.6**	**2,138.6**	**1,774.9**	**1,890.5**	**1,848.6**	**2,019.4**	**2,178.0**	**1,858.5**	**2,234.2**	**1,867.7**	**1,745.8**	**1,632.1**	**1,575.2**	**1,631.3**	**1,699.4**	**2,042.0r**	**2,153.6r**	**2,225.8**

Sources: U.S. Department of the Interior, Bureau of Mines; U.S. Department of Commerce, Bureau of the Census; ABMS.
p - preliminary r - revised

Table 1, Item 14.

Imports and exports of refined copper in the United States

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Imports of Refined Copper	132.1	164.0	192.4	199.9	303.9	146.0	380.7	390.8	455.8	237.2	505.0	391.2	313.9	532.4	555.9	420.1	542.0	557.0	367.1	334.9r	288.4
Exports of Refined Copper	–222.0	–187.7	–182.7	–191.1	–126.7	–172.4	–114.6	–63.0	–113.1	–90.1	–23.9	–66.0	–39.7	–97.2	–105.5	–69.8	–17.1	–20.3	–66.8	–160.4r	–234.5
Net Imports of Refined Copper	**–89.9**	**–23.7**	**9.7**	**8.8**	**177.2**	**–26.4**	**266.1**	**327.8**	**342.7**	**147.1**	**481.1**	**325.2**	**274.2**	**435.2**	**450.4**	**350.3**	**524.9**	**536.7**	**300.3**	**174.5r**	**53.9**

Source: U.S. Department of Commerce, Bureau of the Census.
p - preliminary r - revised

Table 1, Item 15.

Refined stocks and other

	COPPER CONTENT, thousands of short tons																				
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
End-of-year Refined Copper Stocks at:																					
Refineries	142.7	82.7	99.6	43.2	151.6	260.7	272.8	286.7	188.3	78.4	73.4	151.0	210.1	66.1	193.4	150.4	145.1	63.1	42.9	56.3r	52.1
Wire Rod Mills	134.0	120.0	75.0	61.0	131.0	140.0	133.0	116.3	69.7	48.7	54.6	120.3	137.8	127.9	147.7	110.2	72.8	30.9	32.0	35.3r	26.5
Brass Mills	49.0	50.0	35.0	43.0	42.0	33.0	39.0	34.2	30.7	27.0	24.5	29.2	28.0	28.7	29.8	22.0	15.4	16.5	18.7	13.2	11.0
Other Processors	4.0	6.0	5.4	5.6	6.9	6.1	7.0	7.0	7.5	10.4	11.3	9.4	8.4	9.2	8.1	8.1	8.8	9.9	10.2	10.7r	9.0
Government	253.4	251.6	226.6	217.8	35.3	26.2	42.1	22.6	22.5	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3
Commodity Exchange	17.9	20.3	57.8	5.9	43.3	100.0	201.0	184.4	179.6	107.9	179.6	187.6	274.5	409.2	276.3	120.3	93.3	18.3	13.4	16.3	20.2
End-of-Year Total	**601.0**	**530.8**	**499.4**	**376.5**	**410.1**	**566.0**	**694.9**	**651.2**	**498.3**	**294.7**	**365.7**	**519.8**	**681.1**	**663.4**	**677.6**	**433.3**	**357.7**	**161.0**	**139.5**	**154.1r**	**141.1**
Net Change [a]	176.7	−70.4	−31.2	−122.9	33.6	155.9	128.9	−43.7	−152.9	−203.6	71.0	154.1	161.3	−17.7	14.2	−244.3	−75.6	−196.7	−21.5	14.6r	−13.0
Apparent Change [b]	102.3	−82.3	30.6	−126.9	112.3	206.2	159.1	−16.8	−59.6	−60.9	280.8	322.3	307.5	184.2	−257.4	−232.8	−158.6	−108.2	−89.3r	−100.8r	−100.6

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Net Change — the year-to-year increase (+) or decrease (−) of refined copper stocks as reported.
(b) - Apparent Change — the difference between Line 16 and the sum of Lines 13 & 14 in Table 1, required to rationalize the CDA flow sheet. Factors other than changes in stocks are included in the apparent change. The sign of the data (+ or −) is opposite that shown in Table 1.

Table 1, Item 16.

Consumption of refined copper in the United States

	COPPER CONTENT, thousands of short tons																				
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Consumption of Refined Copper by:																					
Wire Rod Mills	1,338.7	1,324.9	1,526.3	1,672.3	1,474.3	1,061.3	1,364.0	1,511.2	1,672.7	1,653.0	1,442.8	1,597.9	1,359.0	1,399.8	1,658.6	1,545.1	1,644.6	1,757.0	1,837.8r	1,872.1r	1,822.7
Brass Mills	660.6	655.8	667.2	714.4	670.2	439.0	584.8	628.6	682.6	672.6	564.0	591.1	433.4	551.4	635.1	566.6	622.7	538.6	543.7r	508.2r	509.8
Ingot Makers	6.8	4.5	6.0	6.1	9.2	4.5	7.5	6.6	8.2	6.9	5.5	6.0	4.8	4.9	7.6	5.9	5.8	5.8	6.2	6.0r	5.9
Foundries	23.7	17.5	17.9	30.6	28.7	21.7	21.0	22.5	22.1	19.9	18.2	17.7	15.1	15.6	17.7	15.9	16.2	16.3	16.7	16.3r	16.0
Powder Plants	6.5	7.2	9.5	12.7	12.0	6.8	11.8	11.3	11.5	11.6	8.3	8.3	7.5	8.5	8.7	8.1	7.9	8.5	8.7	8.5r	8.4
Other Industries [a]	14.2	11.1	10.7	12.2	9.1	9.0	8.4	13.0	24.6	22.0	20.0	16.1	14.6	16.6	12.2	16.7	17.6	18.1	18.5	17.8r	17.5
TOTAL REFINED CONSUMPTION	**2,050.5**	**2,021.0**	**2,237.6**	**2,448.3**	**2,203.5**	**1,542.3**	**1,997.5**	**2,193.2**	**2,421.7**	**2,386.0**	**2,058.8**	**2,237.1**	**1,834.4**	**1,996.8**	**2,339.9**	**2,158.3**	**2,314.8**	**2,344.3**	**2,431.6**	**2,428.9r**	**2,380.3**

Sources: U.S. Department of the Interior, Bureau of Mines; U.S. Department of Commerce, Bureau of the Census; ABMS.
p - preliminary r - revised
(a) - Chemical, steel, aluminum and other industries.

Table 2

Supply of secondary copper from receipt to consumption by brass mills, ingot makers, foundries, powder plants and other industries

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
(1) Receipts of Domestic Scrap	1,447.6	1,334.9	1,440.8	1,560.9	1,504.3	1,113.0	1,271.1	1,318.4	1,426.9	1,661.6	1,541.8	1,553.4	1,317.1	1,302.8	1,352.2	1,468.3	1,488.9	1,546.8	1,708.9r	1,713.1r	1,642.4
(2) Net Scrap Exports (page 12) [a]	–79.0	–50.7	–39.2	–81.4	–70.5	–84.3	–54.1	–58.5	–95.9	–100.7	–120.8	–80.0	–81.8	–45.9	–98.8	–193.6	–189.0	–169.1	–206.5	–240.6	–181.9
(3) Scrap Stocks (page 12)	–13.0	17.0	7.0	–2.0	–3.0	5.0	–19.0	–10.9	22.7	–10.6	12.1	–10.0	9.2	7.3	9.2	–23.5	22.8	0.2	–12.6	13.1	7.1
(4) Recovery From Copper-Base Scrap (page 13)	1,355.6	1,301.2	1,408.6	1,477.5	1,430.8	1,033.7	1,198.0	1,249.0	1,353.7	1,550.3	1,433.1	1,463.4	1,244.5	1,264.2	1,262.6	1,251.2	1,322.7	1,377.9	1,489.8r	1,485.6r	1,467.6
(5) Recovery From Other Scrap (page 13)	16.8	17.0	19.7	21.1	21.1	28.1	35.7	37.9	39.8	42.5	38.9	42.9	40.6	42.7	42.5	42.8	44.6	46.5	50.4	50.2r	49.6
(6) Total Scrap Recovery (page 13)	1,372.4	1,318.2	1,428.3	1,498.6	1,451.9	1,061.8	1,233.7	1,286.9	1,393.5	1,592.8	1,472.0	1,506.3	1,285.1	1,306.9	1,305.1	1,294.0	1,367.3	1,424.4	1,540.2r	1,535.8r	1,517.2
(7) Smelter Production From Scrap	–78.9	–66.3	–69.0	–77.8	–79.5	–49.4	–51.0	–49.4	–59.8	–66.4	–49.5	–67.1	–49.7	–65.3	–186.6	–275.7	–317.3	–304.9	–353.0	–395.8	–374.3
(8) Refined Production From Scrap	–398.7	–304.3	–316.3	–366.3	–404.4	–282.1	–300.2	–303.0	–362.3	–441.2	–474.3	–465.1	–465.7	–377.5	–151.3	–134.1	–130.1	–152.3	–139.1r	–129.9	–118.7
(9) Consumption of Scrap (page 13)	894.8	947.6	1,043.0	1,054.5	968.0	730.3	882.5	934.5	971.4	1,085.2	948.2	974.1	769.7	864.1	967.2	884.2	919.9	967.2	1,048.1r	1,010.1r	1,024.2

Sources: U.S. Department of the Interior, Bureau of Mines; U.S. Department of Commerce, Bureau of the Census; ABMS.

p - preliminary r - revised

(a) - Negative (–) signs denote net exports.

Table 2, Item 2.

Imports and exports of copper-base scrap in the United States

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Imports of Copper-Base Scrap	3.8	13.8	18.8	27.1	41.7	20.2	29.4	28.6	28.8	32.0	32.5	38.8	38.8	60.1	59.6	50.9	61.6	73.0	80.8	96.0	115.7
Exports of Copper-Base Scrap	–82.8	–64.5	–58.0	–106.5	–112.2	–104.5	–83.5	–87.1	–124.7	–132.7	–153.3	–118.8	–120.6	–106.0	–158.4	–244.5	–250.6	–242.1	–287.3	–336.6	–297.6
Net Exports of Copper-Base Scrap [a]	**–79.0**	**–50.7**	**–39.2**	**–81.4**	**–70.5**	**–84.3**	**–54.1**	**–58.5**	**–95.9**	**–100.7**	**–120.8**	**–80.0**	**–81.8**	**–45.9**	**–98.8**	**–193.6**	**–189.0**	**–169.1**	**–206.5**	**–240.6**	**–181.9**

Sources: U.S. Department of Commerce, Bureau of the Census; ABMS.
p - preliminary
(a) - The negative (–) sign for each year is used to be consistent with the convention used in Tables 1, 2 and 4 — namely that imports are **additions** to the domestic flow, and therefore (+), while exports are **subtractions** from the flow, and therefore (–).

Table 2, Item 3.

Copper-base scrap stocks

COPPER CONTENT, thousands of short tons

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Scrap Copper-Base Stocks at:																					
Brass Mills	43.0	37.0	36.0	44.0	45.0	46.0	48.0	54.7	44.4	45.6	44.9	39.7	45.6	39.8	40.3	30.9	32.9	39.8	41.7	36.1	33.1
Secondary Smelters	19.0	24.0	22.0	23.0	24.0	27.0	28.0	33.2	26.0	30.1	30.5	41.7	23.7	18.0	23.5	} 68.9	46.8	39.8	48.4	43.0	39.5
Primary Producers	49.0	27.0	24.0	19.0	18.0	12.0	25.0	27.7	22.1	27.5	16.6	19.1	23.7	28.2	14.3						
Foundries	8.0	14.0	13.0	11.0	13.0	11.0	13.0	11.3	10.8	10.7	9.9	11.1	9.8	9.5	8.5	9.9	7.8	7.7	9.4	7.7	7.3
Other Processors	4.0	4.0	4.0	4.0	4.0	3.0	4.0	2.0	2.9	2.9	2.8	3.1	2.7	2.7	2.4	2.8	2.2	2.2	2.6	2.2	2.0
End-of-Year Total	**123.0**	**106.0**	**99.0**	**101.0**	**104.0**	**99.0**	**118.0**	**128.9**	**106.2**	**116.8**	**104.7**	**114.7**	**105.5**	**98.2**	**89.0**	**112.5**	**89.7**	**89.5**	**102.1**	**89.0**	**81.9**
Net Change [a]	13.0	–17.0	–7.0	2.0	3.0	–5.0	19.0	10.9	–22.7	10.6	–12.1	10.0	–9.2	–7.3	–9.2	23.5	–22.8	–0.2	12.6	–13.1	–7.1

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary
(a) - Net Change — the year-to-year increase (+) or decrease (–) of stocks as reported. The sign of the data (+ or –) is opposite that shown in Table 2.

Table 2, Item 6.

Recovery of copper from scrap

	COPPER CONTENT, thousands of short tons																				
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Copper Recovered From Copper-Base Scrap																					
New Scrap	734.2	752.5	854.4	901.9	864.2	593.6	716.1	731.2	790.4	947.0	828.6	859.7	687.3	708.7	709.0	693.6	700.2	752.1	832.9r	791.3r	800.3
Old Scrap	621.4	548.7	554.2	575.6	566.6	440.1	481.9	517.8	563.3	603.3	604.5	603.7	557.2	555.5	553.6	557.6	622.5	625.8	656.9	694.3r	667.3
Total (Table 2, Item 4)	**1,355.6**	**1,301.2**	**1,408.6**	**1,477.5**	**1,430.8**	**1,033.7**	**1,198.0**	**1,249.0**	**1,353.7**	**1,550.3**	**1,433.1**	**1,463.4**	**1,244.5**	**1,264.2**	**1,262.6**	**1,251.2**	**1,322.7**	**1,377.9**	**1,489.8r**	**1,485.6r**	**1,467.6**
Copper Recovered From Scrap Other Than Copper-Base																					
New Scrap	11.5	10.7	13.0	14.3	14.0	17.4	20.7	21.9	22.9	24.5	22.5	25.6	22.6	22.6	22.5	22.6	22.1	23.9	26.6	25.1r	25.4
Old Scrap	5.3	6.3	6.7	6.8	7.1	10.7	15.0	16.0	16.9	18.0	16.4	17.3	18.0	20.1	20.0	20.2	22.5	22.6	23.8	25.1r	24.2
Total (Table 2, Item 5)	**16.8**	**17.0**	**19.7**	**21.1**	**21.1**	**28.1**	**35.7**	**37.9**	**39.8**	**42.5**	**38.9**	**42.9**	**40.6**	**42.7**	**42.5**	**42.8**	**44.6**	**46.5**	**50.4**	**50.2r**	**49.6**
Copper Recovered From All Scrap																					
New Scrap	745.7	763.2	867.4	916.2	878.2	611.0	736.8	753.1	813.3	971.5	851.1	885.3	709.9	731.3	731.5	716.2	722.3	776.0	859.5r	816.4r	825.7
Old Scrap	626.7	555.0	560.9	582.4	573.7	450.8	496.9	533.8	580.2	621.3	620.9	621.0	575.2	575.6	573.6	577.8	645.0	648.4	680.7	719.4r	691.5
Total Copper Recovered (Table 2, Item 6)	**1,372.4**	**1,318.2**	**1,428.3**	**1,498.6**	**1,451.9**	**1,061.8**	**1,233.7**	**1,286.9**	**1,393.5**	**1,592.8**	**1,472.0**	**1,506.3**	**1,285.1**	**1,306.9**	**1,305.1**	**1,294.0**	**1,367.3**	**1,424.4**	**1,540.2r**	**1,535.8r**	**1,517.2**

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised

Table 2, Item 9.

Consumption of copper scrap in the United States

	COPPER CONTENT, thousands of short tons																				
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Consumption of Copper Scrap by:																					
Brass Mills	446.5	496.6	578.4	612.5	563.0	406.3	519.3	531.9	541.7	608.0	532.3	559.3	448.2	540.9	583.8	529.2	562.8	605.9	670.9r	644.2r	664.4
Ingot Makers	241.4	257.9	250.5	236.7	215.0	164.0	173.0	195.0	205.5	238.2	214.0	213.0	173.2	176.4	219.5	202.4	200.6	201.6	213.2	208.3r	204.1
Foundries	129.7	113.4	121.7	122.7	115.4	90.9	95.7	101.2	105.2	113.0	87.0	84.7	72.1	74.3	84.2	78.7	79.9	80.3	82.7	79.2	78.2
Powder Plants	12.2	16.5	16.0	17.3	17.7	11.6	16.8	18.3	18.5	18.1	12.8	12.9	10.1	13.2	13.1	12.2	11.9	12.8	13.1	12.8r	12.6
Other Industries [a]	65.0	63.2	76.4	65.3	56.9	57.5	77.7	88.1	100.5	107.9	102.1	104.2	66.1	59.3	66.6	61.7	64.7	66.6	68.2	65.6r	64.9
TOTAL COPPER CONSUMED	**894.8**	**947.6**	**1,043.0**	**1,054.5**	**968.0**	**730.3**	**882.5**	**934.5**	**971.4**	**1,085.2**	**948.2**	**974.1**	**769.7**	**864.1**	**967.2**	**884.2**	**919.9**	**967.2**	**1,048.1r**	**1,010.1r**	**1,024.2**

Sources: U.S. Department of the Interior, Bureau of Mines; U.S. Department of Commerce, Bureau of the Census; ABMS.
p - preliminary r - revised
(a) - Chemical, steel, aluminum and other industries.

Table 3

Consumption of metals by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries

	METAL CONTENT, thousands of short tons																				
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
(1) Consumption of Refined Copper (Table 1, Item 16)	2,050.5	2,021.0	2,237.6	2,448.3	2,203.5	1,542.3	1,997.5	2,193.2	2,421.7	2,386.0	2,058.8	2,237.1	1,834.4	1,996.8	2,339.9	2,158.3	2,314.8	2,344.3	2,431.6	2,428.9r	2,380.3
(2) Consumption of Copper in Scrap (Table 2, Item 9)	894.8	947.6	1,043.0	1,054.5	968.0	730.3	882.5	934.5	971.4	1,085.2	948.2	974.1	769.7	864.1	967.2	884.2	919.9	967.2	1,048.1r	1,010.1r	1,024.2
(3) Total Copper Consumed (page 15)	**2,945.3**	**2,968.6**	**3,280.6**	**3,502.8**	**3,171.5**	**2,272.6**	**2,880.0**	**3,127.7**	**3,393.1**	**3,471.2**	**3,007.0**	**3,211.2**	**2,604.1**	**2,860.9**	**3,307.1**	**3,042.5**	**3,234.7**	**3,311.5**	**3,479.7r**	**3,439.0r**	**3,404.5**
(4) Consumption of Zinc	288.1	316.3	387.0	381.0	347.2	234.7	323.1	326.8	347.8	358.9	298.1	313.7	246.6	302.1	353.3	286.7	293.6	323.6	340.9	319.0r	310.2
(5) Consumption of Lead	27.4	25.6	26.1	28.8	28.1	19.7	26.0	30.0	30.1	30.8	25.7	26.0	22.4	25.3	30.8	27.5	27.5	28.5	30.1	28.9	28.3
(6) Consumption of Tin	15.9	15.2	22.5	16.3	16.2	11.7	14.4	16.7	16.4	16.4	14.2	14.5	11.7	12.4	15.2	13.9	13.8	13.9	14.8	14.2r	14.0
(7) Consumption of Nickel	10.3	11.5	11.2	17.2	12.0	12.0	9.7	8.1	7.4	11.2	10.6	14.3	5.8	8.9	10.3	8.5	8.8	9.8	10.3	9.6	9.3
(8) Total Alloying Metal Consumed (page 16)	**341.7**	**368.6**	**446.9**	**443.3**	**403.5**	**278.1**	**373.2**	**383.6**	**401.7**	**417.3**	**348.6**	**368.5**	**286.5**	**348.7**	**409.6**	**336.6**	**343.7**	**375.8**	**396.1**	**371.7r**	**361.8**
(9) Total Metal Consumed	**3,287.0**	**3,337.2**	**3,727.5**	**3,946.1**	**3,575.0**	**2,550.7**	**3,253.2**	**3,511.3**	**3,794.8**	**3,888.5**	**3,355.6**	**3,579.7**	**2,890.6**	**3,209.6**	**3,716.7**	**3,379.1**	**3,578.4**	**3,687.3**	**3,875.8r**	**3,810.7r**	**3,766.3**
(10) Ingot Consumed (page 17) [a]	256.8	276.4	301.3	300.0	284.7	194.3	236.5	258.2	256.6	266.2	235.6	239.6	191.	197.5	205.0	190.2	196.1	198.3	204.6r	196.1r	193.9
(11) Ingot Stocks & Other (page 17) [a,b]	–55.9	–56.6	–32.1	–10.9	–7.2	–24.7	–7.2	–14.2	–21.4	–44.0	–41.2	–43.0	–41.1	–46.1	–100.2	–89.8	–81.3	–80.5	–90.3r	–91.9r	–88.4
(12) Net Metal Consumed (page 17)	**3,231.1**	**3,280.6**	**3,695.4**	**3,935.2**	**3,567.8**	**2,526.0**	**3,246.0**	**3,497.1**	**3,773.4**	**3,844.5**	**3,314.4**	**3,536.7**	**2,849.5**	**3,163.5**	**3,616.5**	**3,289.3**	**3,497.1**	**3,606.8**	**3,785.5r**	**3,718.8r**	**3,677.9**
(13) Wire Rod Mills - Net Metal Consumed (page 17)	1,338.7	1,324.9	1,526.3	1,672.3	1,474.3	1,061.3	1,364.0	1,511.2	1,672.7	1,653.0	1,442.8	1,597.9	1,359.0	1,399.8	1,658.6	1,545.1	1,644.6	1,757.0	1,837.8r	1,872.1r	1,822.7
(14) Wire Rod & Wire Mills - Metal Stocks & Other	–116.7	–68.4	–169.8	–206.3	–148.8	–22.8	–156.0	–82.7	–165.2	–106.0	–54.3	–160.4	–44.0	–73.3	–153.6	–81.1	–144.6	–113.5r	–194.8r	–206.1r	–164.2
(15) Wire Mills - Metal Contained in Products Supplied (Table 4, Item 10)	1,222.0	1,256.5	1,356.5	1,466.0	1,325.5	1,038.5	1,208.0	1,428.5	1,507.5	1,547.0	1,388.5	1,437.5	1,315.0	1,326.5	1,505.0	1,464.0	1,500.0	1,643.5r	1,643.0r	1,666.0r	1,658.5
(16) Brass Mills - Net Metal Consumed (page 17)	1,371.4	1,448.5	1,615.4	1,700.2	1,577.6	1,067.2	1,407.3	1,464.6	1,549.6	1,619.3	1,380.6	1,461.1	1,116.4	1,383.3	1,555.8	1,363.5	1,463.2	1,453.4	1,540.3r	1,455.0r	1,468.7
(17) Brass Mills - Metal Stocks & Other	–101.9r	–90.0r	–93.9r	–40.7r	–149.1r	–27.2r	–99.3r	–76.1r	–78.6r	–78.3r	–97.6r	–128.6r	–85.9r	–170.8r	–161.3r	–134.0r	–188.7r	–28.4r	–80.3r	– 54.5r	–148.7
(18) Brass Mills - Metal Contained in Products Supplied (Table 4, Item 16)	1,269.5r	1,358.5r	1,521.5r	1,659.5r	1,428.5r	1,040.0r	1,308.0r	1,388.5r	1,471.0r	1,541.0r	1,283.0r	1,332.5r	1,030.5r	1,212.5r	1,394.5r	1,229.5r	1,274.5r	1,425.0r	1,460.0r	1,400.5r	1,320.0
(19) Foundries - Net Metal Consumed (page 17)	378.0	364.6	394.0	404.9	380.3	276.0	299.4	326.2	346.2	353.5	297.5	292.4	235.7	243.9	261.3	242.4	245.9	247.8	255.3	245.0r	241.5
(20) Foundries - Metal Stocks & Other	13.0	1.9	–2.0	5.1	–14.3	39.5	3.6	–5.2	–15.2	9.5	–11.5	–10.4	–13.7	5.1	–9.3	–7.4	–7.9	–9.3	–5.3r	–5.5r	–6.0
(21) Foundries - Metal Contained in Products Supplied (Table 4, Item 17)	391.0	366.5	392.0	410.0	366.0	315.5	303.0	321.0	331.0	363.0	286.0	282.0	222.0	249.0	252.0	235.0	238.0	238.5	250.0r	239.5r	235.5
(22) Powder Plants - Net Metal Consumed (page 17)	29.7	32.3	34.6	41.3	36.6	21.8	34.4	36.5	37.4	36.6	26.0	26.1	21.7	26.8	26.9	25.0	24.5	26.2	26.8	26.2r	25.9
(23) Powder Plants - Metal Stocks & Other	–6.2	–6.3	–7.6	–9.3	–2.1	1.2	–1.9	–4.5	–9.4	–9.6	–7.0	–4.1	–4.7	–7.3	–5.4	–6.5	–7.0	–6.7	–4.8	–5.7r	–6.9
(24) Powder Plants - Metal Contained in Products Supplied (Table 4, Item 18)	23.5	26.0	27.0	32.0	34.5	23.0	32.5	32.0	28.0	27.0	19.0	22.0	17.0	19.5	21.5	18.5	17.5	19.5	22.0	20.5	19.0
(25) Other Industries - Net Metal Consumed (page 17) [c]	113.3	110.3	125.1	116.5	99.0	99.7	140.9	158.6	167.5	182.1	167.5	159.2	116.7	109.7	113.9	113.3	118.9	122.4	125.3	120.5r	119.1

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.

p - preliminary r - revised

(a) - Ingot makers consume refined copper, scrap copper and alloying metal, and ship to foundries, brass mills, powder plants and other industries.

(b) - The difference between the copper and alloying metal consumed by ingot makers and the ingot consumed by the customers of the ingot makers. This difference consists of melting and other losses in producing ingot, stock changes, and other factors.

(c) - Chemical, steel, aluminum and other industries.

Table 3, Item 3.

Consumption of copper by wire rod mills, brass mills, ingot makers, foundries, powder plants and other industries

	COPPER CONTENT, thousands of short tons																				
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Consumption of Copper by																					
Wire Rod Mills - Refined	1,338.7	1,324.9	1,526.3	1,672.3	1,474.3	1,061.3	1,364.0	1,511.2	1,672.7	1,653.0	1,442.8	1,597.9	1,359.0	1,399.8	1,658.6	1,545.1	1,644.6	1,757.0	1,837.8r	1,872.1r	1,822.7
Brass Mills [a]																					
Refined	660.6	655.8	667.2	714.4	670.2	439.0	584.8	628.6	682.6	672.6	564.0	591.1	433.4	551.4	635.1	566.6	622.7	538.6	543.7r	508.2r	509.8
Scrap	446.5	496.6	578.4	612.5	563.0	406.3	519.3	531.9	541.7	608.0	532.3	559.3	448.2	540.9	583.8	529.2	562.8	605.9	670.9r	644.2r	664.4
Total	1,107.1	1,152.4	1,245.6	1,326.9	1,233.2	845.3	1,104.1	1,160.5	1,224.3	1,280.6	1,096.3	1,150.4	881.6	1,092.3	1,218.9	1,095.8	1,185.5	1,144.5	1,214.6r	1,152.4r	1,174.2
Ingot Makers [b]																					
Refined	6.8	4.5	6.0	6.1	9.2	4.5	7.5	6.6	8.2	6.9	5.5	6.0	4.8	4.9	7.6	5.9	5.8	5.8	6.2	6.0r	5.9
Scrap	241.4	257.9	250.5	236.7	215.0	164.0	173.0	195.0	205.5	238.2	214.0	213.0	173.2	176.4	219.5	202.4	200.6	201.6	213.2	208.3r	204.1
Total	248.2	262.4	256.5	242.8	224.2	168.5	180.5	201.6	213.7	245.1	219.5	219.0	178.0	181.3	227.1	208.3	206.4	207.4	219.4	214.3r	210.0
Foundries [a]																					
Refined	23.7	17.5	17.9	30.6	28.7	21.7	21.0	22.5	22.1	19.9	18.2	17.7	15.1	15.6	17.7	15.9	16.2	16.3	16.7	16.3r	16.0
Scrap	129.7	113.4	121.7	122.7	115.4	90.9	95.7	101.2	105.2	113.0	87.0	84.7	72.1	74.3	84.2	78.7	79.9	80.3	82.7	79.2	78.2
Total	153.4	130.9	139.6	153.3	144.1	112.6	116.7	123.7	127.3	132.9	105.2	102.4	87.2	89.9	101.9	94.6	96.1	96.6	99.4	95.5r	94.2
Powder Plants [a]																					
Refined	6.5	7.2	9.5	12.7	12.0	6.8	11.8	11.3	11.5	11.6	8.3	8.3	7.[illegible]	8.5	8.7	8.1	7.9	8.5	8.7	8.5r	8.4
Scrap	12.2	16.5	16.0	17.3	17.7	11.6	16.8	18.3	18.5	18.1	12.8	12.9	10.1	13.2	13.1	12.2	11.9	12.8	13.1	12.8r	12.6
Total	18.7	23.7	25.5	30.0	29.7	18.4	28.6	29.6	30.0	29.7	21.1	21.2	17.6	21.7	21.8	20.3	19.8	21.3	21.8	21.3r	21.0
Other Industries [a,c]																					
Refined	14.2	11.1	10.7	12.2	9.1	9.0	8.4	13.0	24.6	22.0	20.0	16.1	14.6	16.6	12.2	16.7	17.6	18.1	18.5	17.8r	17.5
Scrap	65.0	63.2	76.4	65.3	56.9	57.5	77.7	88.1	100.5	107.9	102.1	104.2	66.1	59.3	66.6	61.7	64.7	66.6	68.2	65.6	64.9
Total	79.2	74.3	87.1	77.5	66.0	66.5	86.1	101.1	125.1	129.9	122.1	120.3	80.7	75.9	78.8	78.4	82.3	84.7	86.7	83.4r	82.4
All Industries																					
Refined (Table 1, Item 16)	**2,050.5**	**2,021.0**	**2,237.6**	**2,448.3**	**2,203.5**	**1,542.3**	**1,997.5**	**2,193.2**	**2,421.7**	**2,386.0**	**2,058.8**	**2,237.1**	**1,834.4**	**1,996.8**	**2,339.9**	**2,158.3**	**2,314.3**	**2,344.3**	**2,431.6**	**2,428.9r**	**2,380.3**
Scrap (Table 2, Item 9)	**894.8**	**947.6**	**1,043.0**	**1,054.5**	**968.0**	**730.3**	**882.5**	**934.5**	**971.4**	**1,085.2**	**948.2**	**974.1**	**769.7**	**864.1**	**967.2**	**884.2**	**919.9**	**967.2**	**1,048.1r**	**1,010.1r**	**1,024.2**
TOTAL COPPER CONSUMED (Table 3, Item 3)	**2,945.3**	**2,968.6**	**3,280.6**	**3,502.8**	**3,171.5**	**2,272.6**	**2,880.0**	**3,127.7**	**3,393.1**	**3,471.2**	**3,007.0**	**3,211.2**	**2,604.1**	**2,860.9**	**3,307.1**	**3,042.5**	**3,234.7**	**3,311.5**	**3,479.7r**	**3,439.0r**	**3,404.5**

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.

p - preliminary r - revised

(a) - Direct consumption only; not including consumption of copper in ingots from ingot makers.

(b) - Ingot makers consume refined copper, scrap copper and alloying metal, and ship to foundries, brass mills, powder plants and other industries.

(c) - Chemical, steel, aluminum and other industries.

Table 3, Item 8.

Consumption of alloying metal by brass mills, ingot makers, foundries and powder plants

	ALLOYING METAL CONTENT, thousands of short tons																				
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Consumption of Alloying Metal by:																					
Brass Mills [a]																					
Zinc-Slab	112.2	134.8	177.4	183.6	167.6	104.8	153.1	154.5	162.2	167.0	138.0	147.9	111.7	130.6	151.5	120.1	123.8	138.7	146.1	135.7	131.8
Zinc in Scrap	128.8	129.8	156.2	149.2	132.6	94.7	124.5	125.5	139.8	147.3	122.1	122.3	98.9	128.0	148.5	117.7	121.3	135.9	143.2	133.0	129.1
Lead-Refined	2.5	3.1	3.8	4.9	4.1	2.0	3.5	3.3	3.7	3.9	2.7	2.8	1.6	3.2	3.7	3.0	3.1	3.5	3.7	3.4	3.3
Lead in Scrap	3.2	2.9	3.6	3.6	3.3	2.3	3.4	4.5	3.8	4.0	3.3	3.1	2.4	3.4	3.9	3.2	3.3	3.7	3.9	3.6	3.5
Tin-Refined	1.2	1.1	1.0	1.1	1.1	0.6	0.8	0.7	0.8	0.8	0.8	0.8	0.4	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.5
Tin in Scrap	0.5	0.4	0.5	0.5	0.5	0.3	0.3	0.6	0.5	0.5	0.4	0.3	0.4	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.5
Nickel-Refined	5.1	6.1	6.5	5.4	7.1	7.5	5.5	4.6	4.8	7.6	8.4	11.3	3.5	5.3	6.1	5.0	5.2	5.8	6.1	5.7	5.5
Nickel in Scrap	4.6	4.7	4.1	10.5	4.2	4.1	3.8	3.1	2.2	3.1	1.8	2.6	1.9	3.2	3.7	3.0	3.1	3.5	3.7	3.4	3.3
Total	258.1	282.9	353.1	358.8	320.5	216.3	294.9	296.8	317.8	334.2	277.5	291.1	220.8	274.7	318.6	253.0	260.8	292.1	307.9	285.8	277.5
Ingot Makers																					
Zinc-Slab	9.9	10.4	7.1	6.9	8.2	6.6	7.7	8.3	7.3	7.5	18.9	22.2	14.6	18.1	22.7	20.8	20.6	20.7	21.9	21.4r	21.0
Zinc in Scrap	26.7	31.2	33.9	29.4	28.2	20.8	26.8	29.1	25.0	25.2	9.9	12.2	14.2	17.6	22.1	20.3	20.1	20.2	21.4	20.9r	20.5
Lead in Scrap	16.1	16.8	16.2	18.0	18.1	13.4	16.9	19.7	19.2	19.4	17.1	17.5	16.5	16.8	21.0	19.3	19.1	19.2	20.3	19.8r	19.4
Tin in Scrap	11.2	11.5	19.1	12.5	12.5	9.3	11.4	13.3	12.4	12.5	11.0	11.3	9.2	9.4	11.8	10.8	10.7	10.8	11.4	11.1r	10.9
Nickel in Scrap	0.6	0.7	0.6	1.3	0.7	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total	64.5	70.6	76.9	68.1	67.7	50.5	63.2	70.8	64.3	65.1	57.3	63.6	54.9	62.3	78.1	71.7	71.0	71.4	75.5	73.7r	72.3
Foundries [a]																					
Zinc-Slab	4.6	4.5	6.8	6.0	4.4	3.1	4.2	4.5	4.9	4.0	3.1	3.2	2.4	2.5	2.8	2.6	2.6	2.7	2.8	2.7	2.6
Zinc in Scrap	3.2	2.7	2.8	2.7	3.5	3.0	4.1	4.2	5.6	5.2	4.2	4.0	3.2	3.3	3.7	3.4	3.4	3.5	3.6	3.4	3.3
Lead in Scrap	5.6	2.8	2.5	2.3	2.6	2.0	2.2	2.5	3.4	3.5	2.6	2.6	1.9	1.9	2.2	2.0	2.0	2.1	2.2	2.1	2.1
Tin in Scrap	2.0	1.1	1.0	1.0	1.1	0.9	0.9	1.1	1.6	1.6	1.3	1.4	1.1	1.3	1.5	1.4	1.4	1.4	1.5	1.4	1.4
Total	15.4	11.1	13.1	12.0	11.6	9.0	11.4	12.3	15.5	14.3	11.2	11.2	8.6	9.0	10.2	9.4	9.4	9.7	10.1	9.6	9.4
Powder Plants [a]																					
Zinc-Slab	1.0	0.7	0.7	1.1	1.3	0.8	1.2	1.6	1.6	1.6	1.1	1.1	0.9	1.1	1.1	1.0	1.0	1.1	1.1	1.1	1.1
Zinc in Scrap	1.7	2.2	2.1	2.1	1.4	0.9	1.5	1.1	1.4	1.1	0.8	0.8	0.7	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Tin-Refined	1.0	1.1	1.0	1.2	1.0	0.6	1.0	1.0	1.1	1.0	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total	3.7	4.0	3.8	4.4	3.7	2.3	3.7	3.7	4.1	3.7	2.6	2.6	2.2	2.7	2.7	2.5	2.5	2.6	2.6	2.6	2.6
All Industries																					
Zinc-Slab	**127.7**	**150.4**	**192.0**	**197.6**	**181.5**	**115.3**	**166.2**	**168.9**	**176.0**	**180.1**	**161.1**	**174.4**	**129.6**	**152.3**	**178.1**	**144.5**	**148.0**	**163.2**	**171.9**	**160.9r**	**156.5**
Zinc in Scrap	**160.4**	**165.9**	**195.0**	**183.4**	**165.7**	**119.4**	**156.9**	**159.9**	**171.8**	**178.8**	**137.0**	**139.3**	**117.0**	**149.8**	**175.2**	**142.2**	**145.6**	**160.4**	**169.0**	**158.1r**	**153.7**
Lead-Refined	**2.5**	**3.1**	**3.8**	**4.9**	**4.1**	**2.0**	**3.5**	**3.3**	**3.7**	**3.9**	**2.7**	**2.8**	**1.6**	**3.2**	**3.7**	**3.0**	**3.1**	**3.5**	**3.7**	**3.4**	**3.3**
Lead in Scrap	**24.9**	**22.5**	**22.3**	**23.9**	**24.0**	**17.7**	**22.5**	**26.7**	**26.4**	**26.9**	**23.0**	**23.2**	**20.8**	**22.1**	**27.1**	**24.5**	**24.4**	**25.0**	**26.4**	**25.5r**	**25.0**
Tin-Refined	**2.2**	**2.2**	**2.0**	**2.3**	**2.1**	**1.2**	**1.8**	**1.7**	**1.9**	**1.8**	**1.5**	**1.5**	**1.0**	**1.2**	**1.3**	**1.2**	**1.2**	**1.2**	**1.3**	**1.2**	**1.2**
Tin in Scrap	**13.7**	**13.0**	**20.6**	**14.0**	**14.1**	**10.5**	**12.6**	**15.0**	**14.5**	**14.6**	**12.7**	**13.0**	**10.7**	**11.2**	**13.9**	**12.7**	**12.6**	**12.7**	**13.5**	**13.0r**	**12.8**
Nickel-Refined	**5.1**	**6.1**	**6.5**	**5.4**	**7.1**	**7.5**	**5.5**	**4.6**	**4.8**	**7.6**	**8.4**	**11.3**	**3.5**	**5.3**	**6.1**	**5.0**	**5.2**	**5.8**	**6.1**	**5.7**	**5.5**
Nickel in Scrap	**5.2**	**5.4**	**4.7**	**11.8**	**4.9**	**4.5**	**4.2**	**3.5**	**2.6**	**3.6**	**2.2**	**3.0**	**2.3**	**3.6**	**4.2**	**3.5**	**3.6**	**4.0**	**4.2**	**3.9**	**3.8**
TOTAL ALLOYING METAL CONSUMED (Table 3, Item 8)	**341.7**	**368.6**	**446.9**	**443.3**	**403.5**	**278.1**	**373.2**	**383.6**	**401.7**	**417.3**	**348.6**	**368.5**	**286.5**	**348.7**	**409.6**	**336.6**	**343.7**	**375.8**	**396.1**	**371.7r**	**361.8**

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.

p - preliminary r - revised

(a) - Direct consumption only; not including consumption of alloying metal in ingots from ingot makers.

Table 3, Item 12.

Net consumption of metals by wire rod mills, brass mills, foundries, powder plants, and other industries

	METAL CONTENT, thousands of short tons																				
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Net Metal Consumed by:																					
Wire Rod Mills-Copper (Table 3, Item 13)	1,338.7	1,324.9	1,526.3	1,672.3	1,474.3	1,061.3	1,364.0	1,511.2	1,672.7	1,653.0	1,442.8	1,597.9	1,359.0	1,399.8	1,658.6	1,545.1	1,644.6	1,757.0	1,837.8r	1,872.1r	1,822.7
Brass Mills																					
Copper	1,107.1	1,152.4	1,245.6	1,326.9	1,233.2	845.3	1,104.1	1,160.5	1,224.3	1,280.6	1,096.3	1,150.4	881.6	1,092.3	1,218.9	1,095.8	1,185.5	1,144.5	1,214.6r	1,152.4r	1,174.2
Alloy	258.1	282.9	353.1	358.8	320.5	216.3	294.9	296.8	317.8	334.2	277.5	291.1	220.8	274.7	318.6	253.0	260.8	292.1	307.9	285.8	277.5
Ingot	6.2	13.2	16.7	14.5	23.9	5.6	8.3	7.3	7.5	4.5	6.8	19.6	14.0	16.3	18.3	14.7	16.9	16.8	17.8r	16.8r	17.0
Total (Table 3, Item 16)	1,371.4	1,448.5	1,615.4	1,700.2	1,577.6	1,067.2	1,407.3	1,464.6	1,549.6	1,619.3	1,380.6	1,461.1	1,116.4	1,383.3	1,555.8	1,363.5	1,463.2	1,453.4	1,540.3r	1,455.0r	1,468.7
Foundries																					
Copper	153.4	130.9	139.6	153.3	144.1	112.6	116.7	123.7	127.3	132.9	105.2	102.4	87.2	89.9	101.9	94.6	96.1	96.6	99.4	95.5r	94.2
Alloy	15.4	11.1	13.1	12.0	11.6	9.0	11.4	12.3	15.5	14.3	11.2	11.2	8.6	9.0	10.2	9.4	9.4	9.7	10.1	9.6	9.4
Ingot	209.2	222.6	241.3	239.6	224.6	154.4	171.3	190.2	203.4	206.3	181.1	178.8	139.9	145.0	149.2	138.4	140.4	141.5	145.8	139.9r	137.9
Total (Table 3, Item 19)	378.0	364.6	394.0	404.9	380.3	276.0	299.4	326.2	346.2	353.5	297.5	292.4	235.7	243.9	261.3	242.4	245.9	247.8	255.3	245.0r	241.5
Powder Plants																					
Copper	18.7	23.7	25.5	30.0	29.7	18.4	28.6	29.6	30.0	29.7	21.1	21.2	17.6	21.7	21.8	20.3	19.8	21.3	21.8	21.3r	21.0
Alloy	3.7	4.0	3.8	4.4	3.7	2.3	3.7	3.7	4.1	3.7	2.6	2.6	2.2	2.7	2.7	2.5	2.5	2.6	2.6	2.6	2.6
Ingot	7.3	4.6	5.3	6.9	3.2	1.1	2.1	3.2	3.3	3.2	2.3	2.3	1.9	2.4	2.4	2.2	2.2	2.3	2.4	2.3	2.3
Total (Table 3, Item 22)	29.7	32.3	34.6	41.3	36.6	21.8	34.4	36.5	37.4	36.6	26.0	26.1	21.7	26.8	26.9	25.0	24.5	26.2	26.8	26.2r	25.9
Other Industries [a]																					
Copper	79.2	74.3	87.1	77.5	66.0	66.5	86.1	101.1	125.1	129.9	122.1	120.3	80.7	75.9	78.8	78.4	82.3	84.7	86.7	83.4r	82.4
Ingot	34.1	36.0	38.0	39.0	33.0	33.2	54.8	57.5	42.4	52.2	45.4	38.9	36.0	33.8	35.1	34.9	36.6	37.7	38.6	37.1r	36.7
Total (Table 3, Item 25)	113.3	110.3	125.1	116.5	99.0	99.7	140.9	158.6	167.5	182.1	167.5	159.2	116.7	109.7	113.9	113.3	118.9	122.4	125.3	120.5r	119.1
All Industries																					
Copper	**2,697.1**	**2,705.2**	**3,024.1**	**3,260.0**	**2,947.3**	**2,104.1**	**2,699.5**	**2,926.1**	**3,179.4**	**3,226.1**	**2,787.5**	**2,992.2**	**2,426.1**	**2,679.6**	**3,080.0**	**2,834.2**	**3,028.3**	**3,104.1**	**3,260.3r**	**3,224.7r**	**3,194.5**
Alloy	**277.2**	**298.0**	**370.0**	**375.2**	**335.8**	**227.6**	**310.0**	**312.8**	**337.4**	**352.2**	**291.3**	**304.9**	**231.6**	**286.4**	**331.5**	**264.9**	**272.7**	**304.4**	**320.6**	**298.0**	**289.5**
Ingot (Table 3, Item 10) [b]	**256.8**	**276.4**	**301.3**	**300.0**	**284.7**	**194.3**	**236.5**	**258.2**	**256.6**	**266.2**	**235.6**	**239.6**	**191.8**	**197.5**	**205.0**	**190.2**	**196.1**	**198.3**	**204.6r**	**196.1r**	**193.9**
NET METAL CONSUMED																					
(Table 3, Item 12)	**3,231.1**	**3,280.6**	**3,695.4**	**3,935.2**	**3,567.8**	**2,526.0**	**3,246.0**	**3,497.1**	**3,773.4**	**3,844.5**	**3,314.4**	**3,536.7**	**2,849.5**	**3,163.5**	**3,616.5**	**3,289.3**	**3,497.1**	**3,606.8**	**3,785.5r**	**3,718.8r**	**3,677.9**

Sources: U.S. Department of the Interior, Bureau of Mines; ABMS.
p - preliminary r - revised
(a) - Chemical, steel, aluminum and other industries.
(b) - Total consumption of ingot shown here is less than the consumption of metal by ingot makers shown in the details of Table 3, Item 3 and Table 3, Item 8. The difference, shown as Ingot Stocks & Other in Table 3, is partially melting and other losses in the making of ingot.

Table 4

Supply of wire mill, brass mill, foundry and powder products and their consumption in the end-use markets

METAL CONTENT, millions of pounds

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
(1) Bare Wire	226	218	270	209	219	167	199	230	238	236	197	220	179	158	147	119	136	161	172	182	181
(2) Communication Wire and Cable	735	803	766	873	799	584	687	836	885	971	850	851	751	683	727	629	611	674	673r	696r	736
(3) Building Wire	484	552	580	666	557	483	545	658	718	695	628	660	701	739	888	961	1,015	1,181	1,121r	1,090r	1,079
(4) Magnet Wire	466	427	496	537	446	338	451	516	525	531	443	492	396	444	511	472	470	461r	523r	519r	486
(5) Power Cable	286	247	273	306	303	222	214	241	245	270	280	275	247	218	243	259	255	268	289r	329r	332
(6) Apparatus Wire and Cordage	135	137	169	185	177	139	161	196	202	202	205	189	157	199	227	203	203	231	199r	199r	201
(7) Automotive Wire and Cable (except Magnet)	57	71	80	88	72	69	92	108	121	112	89	95	105	139	186	214	228	217	239	243	228
(8) Other Insulated Wire and Cable	55	58	79	68	78	75	67	72	81	77	85	93	94	73	81	71	82	94	70r	74r	74
(9) Total Insulated Wire and Cable	2,218	2,295	2,443	2,723	2,432	1,910	2,217	2,627	2,777	2,858	2,580	2,655	2,451	2,495	2,863	2,809	2,864	3,126r	3,114r	3,150r	3,136
(10) Total Wire Mill Products [a]	**2,444**	**2,513**	**2,713**	**2,932**	**2,651**	**2,077**	**2,416**	**2,857**	**3,015**	**3,094**	**2,777**	**2,875**	**2,630**	**2,653**	**3,010**	**2,928**	**3,000**	**3,287r**	**3,286r**	**3,332r**	**3,317**
(11) Strip, Sheet, Plate and Foil	916r	997r	1,110r	1,206r	1,095r	850r	993r	1,004r	1,060r	1,105r	906r	997r	754r	838r	997r	765r	807r	915r	989r	914r	891
(12) Mechanical Wire	111	111	128	126	105	65	92	94	104	112	80	82	61	69	73	63r	66r	67r	69r	68r	67
(13) Rod and Bar	693	744	910	1,005	899	587	826	900	943	962	810	814	620	770	876	788	798	913	949	885	861
(14) Plumbing Tube and Pipe	378	447	463	519	347	310	374	439	459	483	414	401	369	447	502	524	548	593	529	532	526
(15) Commercial Tube and Pipe	441	418	432	463	411	268	331	340	376	420	356	371	257	301	341	319	330	362	384	402	295
(16) Total Brass Mill Products (page 19)	**2,539r**	**2,717r**	**3,043r**	**3,319r**	**2,857r**	**2,080r**	**2,616r**	**2,777r**	**2,942r**	**3,082r**	**2,566r**	**2,665r**	**2,061r**	**2,425r**	**2,789r**	**2,459r**	**2,549r**	**2,850r**	**2,920r**	**2,801r**	**2,640**
(17) Total Foundry Products	**782**	**733**	**784**	**820**	**732**	**631**	**606**	**642**	**662**	**726**	**572**	**564**	**444**	**498**	**504**	**470**	**476**	**477**	**500r**	**479r**	**471**
(18) Total Powder Products	**47**	**52**	**54**	**64**	**69**	**46**	**65**	**64**	**56**	**54**	**38**	**44**	**34**	**39**	**43**	**37**	**35**	**39**	**44**	**41**	**38**
(19) Domestic Products - Total	**5,812r**	**6,015r**	**6,594r**	**7,135r**	**6,309r**	**4,834r**	**5,703r**	**6,340r**	**6,675r**	**6,956r**	**5,953r**	**6,148r**	**5,169r**	**5,615r**	**6,346r**	**5,894r**	**6,060r**	**6,653r**	**6,750r**	**6,653r**	**6,466**
(20) Net Imports of Mill Products (page 20)	**132**	**170**	**229**	**191**	**92**	**50**	**226**	**202**	**315**	**215**	**16**	**247**	**224**	**338**	**565**	**503**	**524**	**455**	**350**	**270r**	**177**
(21) Mill Products to Domestic Market*	**5,944r**	**6,185r**	**6,823r**	**7,326r**	**6,401r**	**4,884r**	**5,929r**	**6,542r**	**6,990r**	**7,171r**	**5,969r**	**6,395r**	**5,393r**	**5,953r**	**6,911r**	**6,397r**	**6,584r**	**7,108r**	**7,100r**	**6,923r**	**6,643**
(22) Building Construction	1,854	2,021	2,218	2,389	1,935	1,556	1,874	2,123	2,291	2,320	1,935	2,037	1,857	2,197	2,568	2,587	2,719	3,047r	2,908r	2,797r	2,627
(23) Electrical and Electronic Products	1,626r	1,652r	1,749r	1,880r	1,721r	1,176r	1,495r	1,694r	1,803r	1,915r	1,666r	1,772r	1,489r	1,517r	1,699r	1,472r	1,533r	1,633r	1,660r	1,703r	1,723
(24) Industrial Machinery and Equipment	1,076r	1,029r	1,164r	1,241r	1,115r	821r	964r	1,044r	1,139r	1,159r	1,009r	1,084r	849r	906r	995r	898r	899r	942r	993r	963r	923
(25) Transportation Equipment	638r	741r	807r	922r	774r	631r	869r	943r	931r	908r	637r	712r	568r	708r	891r	814r	814r	817	844r	794r	746
(26) Consumer and General Products	750r	742r	885r	894r	856r	700r	727r	738r	826r	869r	722r	790r	630r	625r	758r	626r	619r	669r	695r	666r	624

*Markets include - Building Construction: Building Wiring; Plumbing & Heating; Air Conditioning & Commercial Refrigeration; Builders' Hardware; Architectural.
Electrical & Electronic Products: Power Utilities; Telecommunications; Business Electronics; Lighting & Wiring Devices.
Industrial Machinery & Equipment: In-Plant Equipment; Industrial Valves & Fittings; Non-Electrical Instruments; Off-Highway Vehicles; Heat Exchangers.
Transportation Equipment: Automobile, Truck & Bus; Railroad; Marine; Aircraft & Aerospace.
Consumer & General Products: Appliances; Cord Sets; Military & Commercial Ordnance; Consumer Electronics; Fasteners & Closures; Coinage; Utensils & Cutlery; Miscellaneous.

Sources: U.S. Department of Commerce, Bureau of the Census ; IPC Technology/Marketing Research Council (Line 11-1983 on); Metal Powder Producers Assn. (Line 18-1978 on); CDA.
p - preliminary r - revised
(a) - Copper content.

Table 4, Item 16.

Supply of brass mill products in the United States

METAL CONTENT, millions of pounds

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Strip, Sheet, Plate and Foil																					
Copper	218r	269r	274r	315r	297r	230r	255r	264r	267r	297r	234r	262r	202r	245r	302r	242r	248r	289r	302r	287r	287
Alloy	698	728	836	891	798	620	738	740	793	808	672	735	552	593	695	523	559	626	687	627	604
Total	916r	997r	1,110r	1,206r	1,095r	850r	993r	1,004r	1,060r	1,105r	906r	997r	754r	838r	997r	765r	807r	915r	989r	914r	891
Mechanical Wire																					
Copper	14	16	20	14	15	7	10	14	20	26	14	16	15	13	12	11	12	13	11	12	13
Alloy	97	95	108	112	90	58	82	80	84	86	66	66	46	56	61	52r	54r	54r	58r	56r	54
Total	111	111	128	126	105	65	92	94	104	112	80	82	61	69	73	63r	66r	67r	69r	68r	67
Rod and Bar																					
Copper	115	109	117	135	149	77	100	112	116	117	111	112	83	82	93	95	93	112	130	125	132
Alloy	578	635	793	870	750	510	726	788	827	845	699	702	537	688	783	693	705	801	819	760	729
Total	693	744	910	1,005	899	587	826	900	943	962	810	814	620	770	876	788	798	913	949	885	861
Plumbing Tube and Pipe																					
Copper	363	431	446	502	335	302	366	432	451	475	407	393	364	441	496	519	545	589	524	529	520
Alloy	15	16	17	17	12	8	8	7	8	8	7	8	5	6	6	5	3	4	5	3	6
Total	378	447	463	519	347	310	374	439	459	483	414	401	369	447	502	524	548	593	529	532	526
Commercial Tube and Pipe																					
Copper	304	288	305	322	265	171	221	239	280	322	273	284	195	234	277	267	276	305	328	347	243
Alloy	137	130	127	141	146	97	110	101	96	98	83	87	62	67	64	52	54	57	56	55	52
Total	441	418	432	463	411	268	331	340	376	420	356	371	257	301	341	319	330	362	384	402	295
All Mill Products																					
Copper	**1,014r**	**1,113r**	**1,162r**	**1,288r**	**1,061r**	**787r**	**952r**	**1,061r**	**1,134r**	**1,237r**	**1,039r**	**1,067r**	**859r**	**1,015r**	**1,180r**	**1,134r**	**1,174r**	**1,308r**	**1,295r**	**1,300r**	**1,195**
Alloy	**1,525**	**1,604**	**1,881**	**2,031**	**1,796**	**1,293**	**1,664**	**1,716**	**1,808**	**1,845**	**1,527**	**1,598**	**1,202**	**1,410**	**1,609**	**1,325r**	**1,375r**	**1,542r**	**1,625r**	**1,501r**	**1,445**
TOTAL BRASS MILL PRODUCTS	**2,539r**	**2,717r**	**3,043r**	**3,319r**	**2,857r**	**2,080r**	**2,616r**	**2,777r**	**2,942r**	**3,082r**	**2,566r**	**2,665r**	**2,061r**	**2,425r**	**2,789r**	**2,459r**	**2,549r**	**2,850r**	**2,920r**	**2,801r**	**2,640**

Source: CDA ; IPC Technology/Marketing Research Council (Copper Foil- 1983 on).
p - preliminary r - revised

Supply of brass mill products in selected countries

METAL CONTENT, millions of pounds

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Benelux	NA	NA	NA	329	304	258	316	335	306	314	299	266	232	209	235	234	210	168r	201r	237r	236
Canada	231	221	236	281	264	192	223	232	272	264	191	229	155	183	206	195	196	224	223	200r	NA
France	585	580	598	667	603	476	569	586	590	638	657	615	600	567	617	561	546	545	604	599	539
Germany	1,067	986	1,130	1,311	1,157	932	1,219	1,207	1,219	1,337	1,403	1,277	1,256	1,378	1,546	1,511	1,560	1,621	1,748	1,798	1,805
Italy	527	494	572	626	554	520	647	639	652	650	734	694	668	697	767	809	873	922	1,087	1,186	1,211
Japan	1,201	1,152	1,330	1,682	1,298	1,148	1,546	1,573	1,722	1,874	1,912	1,832	1,741	1,909	2,181	2,095	2,112	2,261	2,393	2,495	2,573
Scandinavia	279	260	286	316	316	247	285	295	321	348	340	320	324	346	380	357	372	389r	410r	411r	433
Spain	132	133	167	193	181	133	178	183	174	191	184	148	172	164	166	163	167	178	192	196	188
Switzerland	116	104	100	114	118	81	96	116	105	111	120	106	98	106	121	123	116	110	107	103r	99
United Kingdom	956	842	905	1,004	903	737	803	827	845	797	644	563	597	565	620	601	577	577	568	544r	521
United States	2,539r	2,717r	3,043r	3,319r	2,857r	2,080r	2,616r	2,777r	2,942r	3,082r	2,566r	2,665r	2,061r	2,425r	2,789r	2,459r	2,549r	2,850r	2,920r	2,801r	2,640

Sources: World Bureau of Metal Statistics; CDA.
p - preliminary r - revised NA - not available

Table 4, Item 20.

Imports and exports of wire mill, brass mill and powder products

METAL CONTENT, millions of pounds

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990p
Imports of:																					
Wire Rod	2.4	3.0	3.0	5.3	2.8	1.5	2.5	13.8	7.0	6.2	5.4	6.0	7.4	8.6	18.1	22.8	28.2	22.4	15.5	2.1r	4.8
Bare Wire (including Stranded)	} 35.0	27.0	{ 19.3	26.9	42.9	22.0	39.0	27.5	32.8	30.8	18.9	22.3	26.6	35.0	38.7	42.6	50.6	43.4	39.5	36.7r	36.3
Insulated Wire and Cable			23.9	28.9	25.5	19.1	22.7	23.0	37.7	48.5	45.1	39.8	41.3	59.0	90.0	107.2	120.6	135.6	138.5	114.9	106.9
Total Wire Mill Products	**37.4**	**30.0**	**46.2**	**61.1**	**71.2**	**42.6**	**64.2**	**64.3**	**77.5**	**85.5**	**69.4**	**68.1**	**75.3**	**102.6**	**146.8**	**172.6**	**199.4**	**201.4**	**193.5**	**153.7**	**148.0**
Copper-Strip, Sheet, Plate and Foil	26.9	38.7	45.7	48.7	46.9	37.8	59.9	64.7	85.8	80.1	54.1	71.8	59.1	67.6	103.8	82.4	77.3	80.7	83.0	75.9r	86.2
Rod and Bar	3.5	4.1	6.1	6.0	6.7	4.2	6.6	8.0	17.5	17.0	12.0	12.4	9.3	9.2	13.1	14.0	10.7	11.0	17.4	11.5r	8.4
Tube and Pipe	36.4	43.1	51.6	55.0	31.3	24.3	33.7	39.9	46.3	44.8	22.9	33.8	35.7	55.1	65.8	65.1	85.2	99.1	92.6	72.9	46.6
Alloy-Strip, Sheet, Plate and Foil	47.8	74.4	92.4	84.9	57.2	51.4	104.6	105.7	153.7	121.5	81.3	140.7	124.3	158.5	232.0	191.4	172.7	145.1	123.6	108.5	98.1
Mechanical Wire	3.2	4.0	4.3	5.7	4.1	2.6	6.3	7.9	9.9	9.7	7.9	10.4	10.3	11.7	14.8	13.2	22.8	24.5	26.0	26.8	25.3
Rod and Bar	6.9	7.3	12.5	17.9	16.2	11.7	41.7	33.4	51.9	48.3	26.3	121.9	51.4	47.8	83.0	51.0	55.8	64.6	74.6	75.7	61.2
Tube and Pipe	40.3	47.6	53.1	48.2	40.4	32.4	47.3	47.2	69.5	54.4	43.6	51.5	45.5	54.7	71.8	64.0	62.8	61.3	60.8	66.9	57.4
Total Brass Mill Products	**165.0**	**219.2**	**265.7**	**266.4**	**202.8**	**164.4**	**300.1**	**306.8**	**434.6**	**375.8**	**248.1**	**442.5**	**335.6**	**404.6**	**584.3**	**481.1**	**487.3**	**486.3**	**478.0**	**438.2r**	**383.2**
Total Powder Products	**2.3**	**2.4**	**2.7**	**2.3**	**1.7**	**1.6**	**2.6**	**2.4**	**2.5**	**2.3**	**2.0**	**2.7**	**2.3**	**3.1**	**3.3**	**2.5**	**2.8**	**2.5**	**3.2**	**3.0**	**3.3**
TOTAL IMPORTS	**204.7**	**251.6**	**314.6**	**329.8**	**275.7**	**208.6**	**366.9**	**373.5**	**514.6**	**463.6**	**319.5**	**513.3**	**413.2**	**510.3**	**734.4**	**656.2**	**689.5**	**690.2**	**674.7**	**594.9r**	**534.5**
Exports of:																					
Wire Rod	8.3	14.6	10.9	10.4	14.0	10.9	8.5	11.2	13.0	30.9	53.5	30.7	18.2	12.5	13.2	5.2	16.8	23.0	35.0	31.0r	22.8
Bare Wire (including Stranded)[a]	4.2	2.9	5.5	10.4	11.3	7.4	9.6	11.7	18.7	18.8	13.9	15.5	16.7	18.3	19.4	17.6	15.8	22.5	27.4	47.6	51.6
Insulated Wire and Cable	30.3	29.8	31.9	44.0	65.4	84.0	70.6	96.9	102.1	93.8	73.5	94.3	76.0	72.5	66.8	55.8	66.7	97.8	129.8	94.2r	104.0
Total Wire Mill Products	**42.8**	**47.3**	**48.3**	**64.8**	**90.7**	**102.3**	**88.7**	**119.8**	**133.8**	**143.5**	**140.9**	**140.5**	**110.9**	**103.3**	**99.4**	**78.6**	**99.3**	**143.3**	**192.2**	**172.8r**	**178.4**
Copper-Strip, Sheet, Plate and Foil	3.3	1.5	0.9	1.8	2.2	0.8	1.4	4.2	2.9	3.3	6.7	7.3	4.3	3.1	8.7	8.1	2.7	3.4	10.5	8.6	17.1
Rod and Bar	3.7	0.9	1.7	4.4	2.7	8.1	1.4	2.6	6.0	12.0	37.0	10.0	13.8	4.0	3.1	2.8	2.0	8.2	3.0	4.0	5.0
Tube and Pipe	2.1	2.5	2.3	15.5	13.5	4.4	5.1	6.2	5.8	18.8	38.9	24.1	10.1	8.0	9.5	10.0	11.8	14.3	22.1	44.7	35.3
Alloy-Strip, Sheet, Plate and Foil	4.6	4.2	7.9	12.2	14.5	6.4	8.3	8.6	9.0	10.4	17.3	28.4	10.2	11.6	11.7	15.8	11.4	16.9	34.5	21.2	36.9
Mechanical Wire	4.0	3.5	2.5	3.6	8.4	5.0	4.8	4.2	6.9	8.2	8.0	7.9	12.5	11.6	9.1	10.5	11.1	14.5	16.7	8.6	14.5
Rod and Bar	6.1	12.9	14.3	17.4	30.4	15.5	15.2	15.8	19.3	15.2	20.1	18.6	11.0	15.6	16.3	14.6	14.9	16.7	24.5	50.3r	54.2
Tube and Pipe	3.3	5.1	4.1	13.7	16.0	13.2	12.4	7.0	12.0	32.9	31.0	26.6	14.1	13.9	10.0	9.9	9.7	12.9	15.6	9.4	11.2
Total Brass Mill Products	**27.1**	**30.6**	**33.7**	**68.6**	**87.7**	**53.4**	**48.6**	**48.6**	**61.9**	**100.8**	**159.0**	**122.9**	**76.0**	**67.8**	**68.4**	**71.7**	**63.6**	**86.9**	**126.9**	**146.8r**	**174.2**
Total Powder Products	**3.0**	**3.9**	**3.7**	**5.0**	**5.4**	**2.5**	**3.7**	**3.5**	**3.8**	**3.9**	**3.9**	**2.5**	**2.1**	**1.7**	**1.9**	**2.5**	**3.0**	**4.9**	**5.8**	**5.4**	**5.4**
TOTAL EXPORTS	**72.9**	**81.8**	**85.7**	**138.4**	**183.8**	**158.2**	**141.0**	**171.9**	**199.5**	**248.2**	**303.8**	**265.9**	**189.0**	**172.8**	**169.7**	**152.8**	**165.9**	**235.1**	**324.9**	**325.0r**	**358.0**
NET IMPORTS (Table 4, Item 20)	**131.8**	**169.8**	**228.9**	**191.4**	**91.9**	**50.4**	**225.9**	**201.6**	**315.1**	**215.4**	**15.7**	**247.4**	**224.2**	**337.5**	**564.7**	**503.4**	**523.6**	**455.1**	**349.8**	**269.9r**	**176.5**

Sources: U.S. Department of Commerce, Bureau of the Census; Copper & Brass Fabricators Council, Inc.; CDA.

p - preliminary r - revised

(a) - Stranded not included prior to 1972.

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